



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,906	12/16/2003	Byung-Seok Soh	Q77082	3892
23373	7590	12/06/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			APANIUS, MICHAEL	
			ART UNIT	PAPER NUMBER
			3736	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/735,906	SOH ET AL.
	Examiner Michael Apanius	Art Unit 3736

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 27 September 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5,7-13 and 15-18 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,7-13 and 15-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

1. This office action is in response to the amendment filed on 9/27/2006. The amendments to claims 1, 7-11 and 15-18 and the cancellation of claims 6 and 14 are acknowledged. Currently, claims 1-5, 7-13 and 15-18 are pending.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-5, 7, 11-13 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel, US 2004/0012557 A1, hereinafter referred to as "Daniel," in view of Ishikawa et al, US 6,261,247 B1, hereinafter referred to as "Ishikawa."

4. As to **Claims 1 and 11**, Daniel teaches **an apparatus and method for detecting finger motion in a wireless manner**, "hand-held computer interactive device," comprising:

a. **A finger-motion detecting unit, which is configured to be attached to a user's finger** - Page 2, Column 2, Paragraph 0032, Lines 3-13 -- **is operated using a wireless power signal** - Page 3, Column 1, Paragraph 0033, Lines 18-24, **and is configured in the form of a switch** - Page 4, Column 2, Paragraph

0041, Lines 3-8, **and is adapted to generate a finger-motion signal when the switch is turned on.** Page 3, Column 1, Paragraph 0035, Lines 6-8;

b. **A finger-motion transmitting unit, which is operated using the wireless power signal, receives the finger-motion signal provided by the finger-motion detecting unit, modulates the finger-motion signal to have information on which finger is moved, and transmits the modulated finger-motion signal in a wireless manner** -- Page 3, Column 2, Paragraph 0036,

Lines 11-22; and

c. **A finger-motion signal receiving unit, which outputs the wireless power signal and receives and reads the modulated finger-motion signal provided from the finger-motion signal transmitting unit to determine which finger is moved** - Page 3, Column 1, Paragraph 0034, Lines 8-11.

What Daniel does not teach is the specific structure of wireless transmission using radio frequency (RF) wireless means. To this extent, Ishikawa teaches an anatomical position sensing system with "a remote receiver in an external monitoring station," - 902 -- which sends "power by magnetic coupling," -- Column 11, Line 47 -- at a "low frequency RF power signal," -- Abstract, Line 11 -- and receives "transmitting data by RF transmission," -- Column 11, Line 46 -- to transponders (P) and (S), wherein the low frequency RF power signal is used "to energize the transponders." In addition Ishikawa teaches that the transponders subsequently "emit a data signal at a very high RF frequency which is directed at the antenna/coil" of the receiver -- Abstract, Lines 11-20.

Daniel teaches, "It will be apparent to one skilled in the art that the embedded electronics may generate short range radio signals,"- Page 3, Column 1, paragraph 0033, Lines 14-18 The specific structure of RF transmission used by Ishikawa is a well known way to use RF signal transmission to both transmit both power and data signals in such a device. Therefore, it would have been obvious for one skilled in the art at the time of the invention to modify Daniel using the teachings of Ishikawa to incorporate wireless powering and data transmission using RF signal means.

5. As to **Claim 2**, the combination of Daniel and Ishikawa discloses the limitations set forth in Claim 1, as previously discussed. As to Claim 2, Daniel does not describe the specifics of wireless transmission means via RF transmission. Ishikawa teaches **wherein the finger-motion transmitting unit includes: a coil unit which generates a predetermined amount of power using the wireless power signal -- "the transponder, 900, includes and antenna/coil," which "serves the dual purpose of receiving power from the station, 902, and transmitting data on an RF carrier signal to the station, 902. The power may be received by the antenna/coil by direct coupling..." or by "an electromagnetic wave... used to transmit power from the station."** -- Column 11, Lines 56-61. Ishikawa further teaches **a control unit which is driven by the predetermined amount of power, and is adapted to store a finger-motion signal inputted from the finger-motion detecting unit and convert the finger-motion signal into the modulated finger-motion signal --"control logic, 914, which can be part of an onboard processor that controls the converter, 912" and "a converter, 912 ...**

used to convert the condition sensed by the transducer to a signal that can be transmitted out to the station, 902,"-- Column 12, Lines 51-56.

6. As to **Claims 3 and 12**, Ishikawa further teaches **wherein the control unit converts an alternating current power generated by the coil unit into a direct current power to generate the predetermined amount of power** -- "the power signal received by the antenna/coil, 903, is rectified and smoothed by an RF rectifier smoother circuit, 904," -- Column 11, Line 66-67.

7. As to **Claims 4 and 13**, Ishikawa further teaches **wherein the control unit modulates the finger-motion signal into the finger-motion signal having a predetermined frequency, depending on which finger is moved, and outputs the modulated finger-motion signal** --"control logic, 914, which can be part of an onboard processor that controls the converter, 912" and "a converter, 912, ... used to convert the condition sensed by the transducer to a signal that can be transmitted out to the station, 902" and "an RF modulator, 918, modulated the output from the converter, 912, onto the carrier frequency signal," -- Column 12, Lines 45-58. Furthermore, Daniel also teaches, "[the] central body, 116, includes electronics for translating finger and thumb movements,"- page 3, Column 2, Paragraph 0036, Lines 12-14.

8. **Claim 5** is rejected as it would have been an obvious matter of design choice to have a coil that is adapted to be placed or wound about a finger, since applicant has not disclosed that adapting the coil to be wound about a finger solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the coil to be integrated with the control chip, as part of the sensor, or in any

number of other placements and/or configurations in conjunction with the claimed invention.

9. As to **Claims 7 and 15**, Daniel teaches **wherein the switch is configured to be mounted on a predetermined joint of the user's finger, and is adapted to generate a finger-motion signal when the switch is turned on by user flexing the joint** -

Page 4, Column 2, Paragraph 0043, Lines 12-20. 12.

10. **Claims 8-10 and 16-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel in view of Ishikawa as applied to Claims 1-5, 7, 11-13 and 15 as discussed previously, and in further view of Mohri, US 6,515,669 B1, hereinafter referred to as "Mohri." The combination of Daniel in view of Ishikawa teaches the limitations of the present invention and method for using the invention as disclosed in Claims 1-5, 7, 11-13 and 15, respectively. What they do not teach are various embodiments of a switch to control signal generation. Mohri teaches an operation input device applied to three-dimensional input device - Title -- **wherein the switch is configured to be mounted on an end of the user's finger, and is adapted to generate a finger- motion signal when the switch is turned on: (a) by tapping with finger, (b) when adjacent fingers come in contact with each other or, (c) when a finger and thumb come into contact**-- "the operation input device according to appendices (3) and (4) is characterized in that the operation input analysis means comprises a total collision detection means for analyzing and determining a collision operation pattern between all fingers and hand and a desk, floor, lap, or the like,"-

Column 21, Lines 9-13. Mohri further teaches that this collision detection means performs as a "virtual switch that can be used in any place using a desk, lap, or the like without requiring any new elements like a switch, the switch input operation can be performed." Therefore, It would have been obvious for one with ordinary skill in the art to modify the teachings of Daniel and Ishikawa in further view of the teachings of Mohri at the time of the invention to include the (virtual) switch mechanisms taught by Mohri, as it would have been beneficial to include any of the virtual switch means taught by Mohri, since it would be beneficial to not require any new elements, while incorporating a switch function.

#### ***Response to Arguments***

11. Applicant's arguments, with respect to the objection of claim 5 have been fully considered and are persuasive. The objection of claim 5 has been withdrawn.
12. Applicant's argues that although the input device of Daniel may be embodied in a virtual keyboard, amended claim 1 is distinguished from Daniel in that the claimed finger-motion detecting unit is configured in the form of a switch and is adapted to generate a finger-motion signal when the switch is turned on. In response, it is respectfully submitted that Daniel does disclose a finger-motion detecting unit configured in the form of a switch. As noted by the Applicant, Daniel discloses that the input device can be used as a virtual keyboard (paragraph 41). The input device includes pressure sensors (paragraph 41, line 8) which detect an applied pressure to determine when a key is pressed or *switched on*. The pressure sensors generate finger

motion signals when a finger applies pressure to a sensor at least when the virtual key is pressed and therefore, when the switch is turned on. Therefore, Daniel discloses a finger-motion detecting unit that is configured in the form of a switch and is adapted to generate a finger-motion signal when the switch is turned on.

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Apanius whose telephone number is (571) 272-5537. The examiner can normally be reached on Mon-Fri 8am-4:30pm.

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone

Art Unit: 3736

number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MA

  
MARK E. HINDENRUG  
PRIMARY PATENT EXAMINER  
TELEPHONE NUMBER 3700